DOCUMENT RESUME

ED 295 335 EA 020 108

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TITLE Stress and Perception of the Level of Structuration in Schools by the Teachers.
PUB DATE [87]
NOTE 20p.; Translation of French-language paper. Contains some faint and broken print.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Administrative Organization; *Bureaucracy; Discipline; Elementary Secondary Education; Foreign Countries; School Surveys; Student Behavior; *Teacher Administrator Relationship; *Teacher Burnout; *Teacher Morale
IDENTIFIERS *Ontario (Ottawa); *Teacher Stress

ABSTRACT

A survey was administered to 510 high school teachers, and completed by 302 French-speaking teachers (56 percent) in the Ottawa-Hull (Canada) region to examine their views regarding the degree of structuration in their school organization, to determine the relationship of these views to their degrees of stress, and to determine if a greater degree of stress related to structuration was experienced by one particular age group. One would suppose that people employed in bureaucratic organizations would have a greater degree of stress due to the organizational structure. The six aspects of bureaucracy addressed in the survey instruments included hierarchy of authority, division of labor, presence of rules, procedural specifications, impersonality, and technical competence. Among the three questionnaires used in the study, the School Organizational Inventory assessed bureaucratic patterns in schools and the Teacher Stress questionnaire assessed the degree of teacher stress. According to the respondents, no significant relationship existed between the degree of teacher stress and the six aspects of bureaucracy addressed in the survey instruments. However, the survey revealed a high degree of teacher stress related to discipline and student behavior, regardless of structuration. A comparison of age groups to the degrees of stress revealed that teachers aged 35 to 45 had a higher degree of stress than the other age groups. The document includes 4 tables and 28 references. (RG)

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Stress and Perception of the Level of Structuration in Schools by the Teachers

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Abstract

In this text the authors study the relationship between the level of structuration in schools and the level of stress felt by the teachers in the work place.

302 French-speaking teachers in the Ottawa-Hull area participated by responding to questionnaires. The aim of the questionnaires was to verify if the perception of the level of structuration had an incidence on the level of stress in the work place. Three questionnaires were used in this research: Personal Data Information Questionnaire, School Organizational Inventory (MacKay & Robinson, 1966), and Teachers' Stress (Kyriacou & Sutcliffe, 1978).

Introduction

A review of the literature presented by Fortin (1985, 1986) indicates the importance of the relationship between the level of stress in the workplace and some organizational variables. The population studied in that research was made up of language teachers employed in the Canadian government's language training program (Public Service Commission of Canada). We have concluded that in the workplace the level of stress for those teachers was high and significant on some variables: inter-personal relationship, evaluation, work routine, teaching methods and work conditions.

Review of Literature

Pines, Aronson and Kafry (1982) have mentionned several researches done on that specific topic. The study of some work-related variables in certain organizational contexts gives similar results. In those researches the organizational context mainly signifies the level of structuration reached by the organization. Haag (1981) uses the same words to describe the school organization. More specifically, the problem is to know if a high level of stress for a teacher could be related to a high level of structuration. In this present paper, the organizational context means the level of structuration reached by the organization and it refers to the main characteristic of the bureaucracy.

Fortin (1986) also notes in another research that different organizational contexts do not have the same impact on the level of stress felt by teachers. Balderson J. (1977) notes the same

fact in a communication presented at the AERA. Hiebert (1985) also mentions a few studies conducted on that specific topic. In this research, we will therefore try to clearly identify the importance of the level of structuration on the level of stress felt by teachers.

Statement of the Problem

The objective of this research is to measure teachers' perception of the level of structuration reached by their school organization and to verify if this perception (independant variable) is related in a significant way to the level of stress at work (dependant variable). We also want to learn if a higher level of stress related to the level of structuration is felt by one age group in particular.

Pines, Aronson and Kafry (1982) mention an empirical research done by Armstrong on the impact of the organizational structure on performance at work, job satisfaction and burn-out. It would appear that most people working in a bureaucratic organizations will have higher stress because of the organizational structure.

According ot Pines, Aronson and Kafry (1982) stress could be related to such bureaucratic characteristics as work routine, lack of autonomy and lack of consideration. For Brunet, Goupil and Archambault (1986) the organizational climate must be studied in order to measure the level of stress among school administrators. The variable related to the perception of work environment as a source of stress is an essential factor to be considered in a study on stress (Barnabé, 1984).

In this research, the organizational context refers to the main characteristics of the bureaucratic structure. Also the impact of those characteristics could vary according to the teachers' perception as supported by empirical datas (Robinson 1966, Mac Kay 1969, Punch 1969).

Characteristics of the bureaucratic organization such as hierarchy of authority, division of labor, rules and regulation, procedures for dealing with work situations, impersonality and specialization have been described by the German sociologist Weber (1947). Since then much research has been done on the application of those characteristics.

The most significant results related to the school systems have been provided by various researchers such as Mac Kay (1964, 1966, 1969), Anderson (1964), Robinson (1966), Punch (1969), Asherwood and Hay (1972, 1973). Those results indicate that Weber's six characteristics can be applied when considering the bureaucratic structure of schools. They also agree on the fact that the level of bureaucratization of the school is related to the perception of the employees concerning those characteristics.

Hall (1961) saw the limitations of treating bureaucratic research strictly in terms of comparison with Weber's ideal type. He decided that a more fruitful approach would be "to treat organizations as possessing characteristics of the bureaucratic model in varying degrees along the several dimensions of bureaucracy". To conduct his research, Hall developed an instrument called the "Organizational Inventory". The purpose of the instrument was to measure six bureaucratic dimensions derived primarily from Weber's model.

Later studies by MacKay (1964), Punch (1969), Asherwood and Hay

(1973) adapted Hall's instrument in order to use it in their own research. They all agree that the characteristics of the bureaucratic system are closely interrelated and, at the same time, are different enough to be used in a study on organizational structure. Those six characteristics are: hierarchy of authority, division of labor, presence of rules, procedural specifications, impersonality and technical competence.

Those characteristics are included in the questionnaire used in this research.

Instrumentation

Three questionnaires have been used in his research: the School Organizational Inventory (MacKay and Robinson, 1966), Teacher Stress (Kyriacou and Sutcliffe, 1978) and the Personal Data Information Questionaire (Fortin, 1985).

The School Organizational Inventory (SOI) measures bureaucratic patterns in schools. It has six dimensions: Hierarchy of authority, Specialization or Division of Labor, Rules and Regulations, Specifications of Procedures, Impersonality and Technical Competence. The SOI has forty-eight (48) Likert-type items. The respondent is asked to indicate his response item on a five point scale wich ranges from "very frequently or always true" (five points) to "very rarely or never true" (one point).

In order to verify the validity of this questionnaire, it was first presented to the annual meeting of the "Association canadienne-française pour l'avancement des sciences", at Laval

University in 1984. This led to some items of the questionnaire being further clarified. The split-half method was used and the coefficient obtained varied between .72 and .80.

Everett (1984) applied the Spearman-Brown formula for split-half reliability to each of the subscales. The reliability coefficients were greater than .80 on each scale. The use of that questionnaire is then justified by the high validity of it coefficients.

We have also used Kyriacou and Sutcliffe's questionnaire (1978) in order to measure the level of stress among teachers. The rating scale consists of 51 items on a 5 point scale ranging from never (1) to always (5). Those items have been regrouped under four different factors: students' behavior, work condition, time repartition and students' acknowledgement. Those factors are significantly interrelated. The coefficients of correlation vary from .64 to .78 and were also calculated using the split-half method. This test was chosen because of its high reliability, validity and the determination that it gives the most valid assessment of the respondent's type of stress.

In the School Organizational Inventory, teachers are asked to rate on a 5 point scale (Likert type, 1972) their perception of the level of structuration of their school. The results of both tests compare favorably with reliabilities of the standardized tests.

Population of the study

In this research, high school teachers from the Ottawa-Hull area were asked to complete the questionnaires. In order to protect the confidential nature of the answers the results will be given globally. The results, therefore, are valid for the whole population, not for one school in particular. These teachers are employed on a permanent basis in francophone schools. The number of students in those schools is over 800 students. We have sent the questionnaires to 510 teachers. When completed, we have received 302 questionnaires back (56,2%): 85 by women and 217 by men.

Methods and presentation of the data

The first step was to find out if a significant difference existed between the level of stress at work and the level of structuration as perceived by the teachers. Globally, we did not find a significant correlation ($r = .05$, prob. = 0,41, $n = 302$).

In view of this result, so we then decided to consider the measure of stress under four factors and the level of structuration under six factors. Those results are shown in Table I.

Table I

Intercorrelations between the 10 factors
four factors of stress and six factors of structuration

FOUR FACTOR OF STRESS	FACTORS OF STRESS: Work Conditions	FACTORS OF STRESS: Time Repartition	FACTORS OF STRESS: Acknowledgement	FACTORS OF STRUCTURATION: 1. Hierarchy	FACTORS OF STRUCTURATION: 2. Division of work	FACTORS OF STRUCTURATION: 3. Rules	FACTORS OF STRUCTURATION: 4. Procedures	FACTORS OF STRUCTURATION: 5. Impersonality	FACTORS OF STRUCTURATION: 6. Specialization
1. Student's behavior	0.78***	0.74***	0.74***	0.18***	0.21***	0.20***	-0.13**	-0.16***	-0.15***
2. Work Conditons →		0.84***	0.84***	0.14**	0.13*	0.14**			
3. Time Repartition →			0.75***	0.15***	0.16***	0.16***			
4. Acknowledgement →				0.14**	0.14**	0.15**			
FACTORS OF STRUCTURATION									
Hierarchy →					0.87**	0.91**			
Division of work →						0.92***			
Rules →									
Procedures →								0.90***	0.90***
Impersonality →									0.99***

* Significant correlations: $p < 0.05$
** Significant correlation: $p < 0.02$
*** Significant correlation: $p < 0.01$

In Table I, important correlations between the following variables are noted

a) the four factors have a strong correlation between them (0,74 to 0,84),

b) the first three factors of structuration also have a strong correlation between them (0,87 to 0,90).

The correlations between the variables indicate that

1- there is a low correlation between the four factors of stress with the first three factors of structuration (0,13 to 0,21),

2- there is a low-correlation between the last three factors of structuration and the first factor of stress.

Being given the fact that the results don't indicate significant relations, we have decided to formulate the following hypothesis. For each of the six factors of structuration, there is no significant difference between the high scores (a score of 3 or more on a 0 to 5 scale) and low scores (below 3). Concerning the structuration related to the level of stress and that for each of the four factors of stress.

In Table II we have sources of stress (dependant variable) and the six factors of structuration (independant variables). The averages concerning the stress have been calculated from a scale varying from 0 to 5.

Table II

Factors of structuration

FACTORS OF STRESS	Hierarchy		Division of work		Rules		Procedures		Impersonnality		Specialization	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
Number:	191	111	165	137	175	127	282	20	274	28	279	23
Student's Behavior												
Average:	2.23	2.38	2.15*	2.44	2.20*	2.39	2.32*	1.74	2.33*	1.81	2.32*	1.81
Standard-Deviation	0.80	0.79	0.82	0.73	0.81	0.77	0.[illegible]	0.92	0.78	0.81	0.78	0.87
F:	2.55		10.54		3.47		10.38		11.39		8.82	
PROB:	0.112		0.001*		0.04[illegible]*		0.001*		0.000*		0.003*	
Work Conditions												
Average:	2.22	2.26	2.18	2.30	2.22	2.26	2.26*	1.85	2.27*	1.92	2.26	1.97
Standard-Deviation	0.76	0.68	0.80	0.61	0.77	0.65	0.70	0.91	0.70	0.86	0.70	0.89
F:	0.22		2.25		0.23		6.31		5.91		3.46	
PROB:	0.638		0.135		0.633		0.012*		0.016*		0.064*	
Time Repartition												
Average:	2.19	2.24	2.12*	2.33	2.18	2.25	2.24*	1.87	2.24*	1.94	2.23	1.94
Standard-Deviation	0.78	0.71	0.79	0.66	0.78	0.69	0.72	0.89	0.73	0.80	0.73	0.85
F:	0.33		6.09		0.59		4.52		4.03		3.25	
PROB:	0.569		0.014*		0.443		0.034*		0.046*		0.073	
Acknowledgement												
Average:	2.25	2.26	2.17	2.35	2.22	2.30	2.28*	1.90	2.27	2.04	2.27	1.98
Standard-Deviation	0.81	0.74	0.84	0.70	0.81	0.75	0.77	0.93	0.93	0.77	0.77	0.92
F:	0.01		3.91		0.74		4.37		2.37		3.02	
PROB:	0.912		0.049*		0.391		0.037*		0.125		0.083	

* The averages are different if the prob is < = 0.05

We have to consider the six factors fo structuration in two distinct groups. The first group concerns hierarchy, division of work and rules and regulations; the second group, procedures, impersonality and specialization. In Table II, we note that at work, the level of stress is always higher for a high level of structuration in the first three factors while the level of stress is still high for the last three factors.

Many considerations could be put forward, but let's examine stress related to the students' behavior. This factor is rather important because 5 out of 6 noted differences are significant. It is in this specific factor that we find most of the significant differences. It seems that a high level of stress related to students' behavior is always noted whatever the level of structuration of the school. Blase, J.J. and Edward F. Pajak (1986) had also noticed the same phenomena. In our research the students' behavior is a major source of stress among high school teachers. Despite a rigid structure related to problem solving (discipline), teachers have a high significant level of stress.

It would appear that having a clear policy concerning discipline does not reduce stress for teachers. However, other aspects should be studied before giving final conclusions. This could be done using a larger population; then, we could compare the results obtained in this research.

We have also compared the groups of age related to the level of stress. Tables III and IV have been elaborated from the analysis of the variant. For the 4 factors of stress taken individually, there are no significant differences between the group 26-39 years and the other groups. However, there is a significant difference between the group 31-35 years and the other groups. However, there is a significant difference between the group

31-35 years and the group 51-55 years, as well as for group 56 years +, for each of the factors. A significant difference has also been noted between the group 36-40 years and the group 46-50 years, 51-55 years and 56 years +. Finally a significant difference has been noted between the group 41-45 years and the groups 46-50 years, 51-55 years and 56 years +. The group 35-45 years has a significant higher level of stress compared to the others groups of the sample. Sofer (1970) had noted this same phenomena in his research.

Table III

Group of age and four variables

GROUP OF AGE	Students behavior			Work conditions			Time repartition			Acknowledgement		
	N	X	S	N	X	S	N	X	S	N	X	S
26 - 30	6	2.02	0.95	6	2.24	0.77	6	2.17	0.84	6	2.14	0.79
31 - 35	15	2.33	0.88	15	2.14	0.86	15	2.25	0.81	15	2.18	0.82
36 - 40	50	2.74	0.39	50	2.69	0.31	50	2.64	0.44	50	2.72	0.47
41 - 45	130	2.59	0.56	130	2.51	0.36	130	2.45	0.48	130	2.55	0.47
46 - 50	55	1.82	0.79	55	1.86	0.82	55	1.89	0.74	55	1.87	0.84
51 - 55	32	1.56	0.61	32	1.48	0.53	32	1.46	0.52	32	1.46	0.59
56 et +	14	1.81	0.86	14	1.93	0.87	14	1.90	0.83	14	1.82	0.86

N: number
X: average
S: standard-deviation

Table IV

The differences are significant (*) at p < 0.05 between the groups of age for factors a b c d

GROUP OF AGE	26 - 30	31 - 35	36 - 40	41 -45	46 - 50	51 - 55	56 et +
26 - 30 ---------->							
31 - 35 ---------->						*	*
36 - 40 ---------->					*	*	*
41 - 45 ---------->					*	*	*
46 - 50 ---------->							
51 - 55 ---------->							

a: Students behavior
b: work conditions
c: time repartition
d: acknowledgement

Summary, findings and recommendations

If we delve deeper in our reserach for the group arond age 40, we find that the level of structuration could have an impact on the level of stress at work. However, many facts related to that specific period of life must also be considered. The level of stress is caused not only by the level of structuration but by factors which would appear to be deeper and more complex.

In this research, we wanted to verify the hypothesis that the level of stress could be related to the level of structuration reached by the School organization. The results indicate that

the level of stress at work is not related in a significant way to the six factors of structuration studied in this research. Therefore, it is not possible to establish a cause-effect relationship.

Even if this relationship is not significant for the six factors taken globally. The research done by Pine (1982), Meléndez and Sutzman (1983) must be considered. Pine and Meléndez maintain that a less rigid level of structuration does not reduce the level of stress at work but prevents it reaching intolerable levels.

Another point we must consider in this research is the fact that whatever the level of structuration reached by an organization, the problem of discipline is always a source of stress for teachers. Given the fact that the set of rules and procedures coming from a high level of structuration does not reduce significantly the level of stress, it would be important to face the problem directly as mentionned by Hiebert (1985). For example, he suggests training teachers in inter-personal relationship skills and giving them training in teaching methods. It would then be possible for a teacher to direct more easily his or her class, thus avoiding discipline problems. The school organization cannot alone solve that problem.

We have also consider the level of stress at work, in relation to the age groups. It seems that teachers at the beginning of mid career have a higher level of stress than do the other groups. That has also been noted by Pines, Aronson and Kafry (1982). Finally Chickering and Knefelkamp (1980) have suggested that the school systems should try to develop a more flexible type of structure in order to take into account the individual career's cycle.

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